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Growing export performance of transition economies: EU market access versus supply capacity factors

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Summary

Remarkable growth of export performance of transition economies has been one of the most outstanding features of the transition and EU integration processes. The paper looks at the reasons behind this phenomenon. Following Redding and Venables (2003, 2004), and Fugazza (2004), we distinguish between foreign/EU market access and internal supply capacity factors. EU market access has been of great importance for export performance but does not explain the inter country differences. Inter country differences in export performance are explained by internal supply capacity factors, where stable institutional setup, structural reforms, and targeted FDI are in the forefront.

Key words: export performance, transition economies of Central and Eastern Europe, (EU) market access, supply capacity, institutional setup, FDI

JEL Classification: F120, F150, F210, O100, P300

Growing export performance of transition economies: EU market access versus supply capacity factors

1. INTRODUCTION

The remarkable upgrading of export performance has been one of the most outstanding features of the transition and EU integration processes of the former socialist countries of Central and Eastern Europe (CEEC). Since the beginning of the 1990s, these countries have recorded extremely high growth of exports in absolute as well as in relative terms, which has been accompanied by increasing market shares abroad, by the predomination of the EU-15 as the main market, and by considerable changes in the structure of exports in favor of goods with higher value added. In this analysis we confine ourselves to the most developed CEEC and distinguish between the countries which joined EU in 2004 (the CEEC-8: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia) and the two countries which joined the EU in January 2007 plus Croatia (the CEEC-3: Bulgaria, Croatia, and Romania). We distinguish between both groups of countries on the grounds that, in the period we analyze, the former has shown better export results than the latter, and has also come much further in the EU integration and transition processes.

In 1990-2004, the exports of the CEEC-8 increased by almost seven times, i.e. by 667%, as compared to 220% for the EU-15 (in 1991-2004) and 263% for the global total. The absolute increase of exports has been accompanied by a no less impressive increase of export intensity; the exports to GDP ratio in the CEEC-8 increased from 29.3% in 1995 to 46.0 in 2004, compared to an increase from 20.5% to 26.6% in the case of the EU-15 (in 1991-2004) and from 16.1% to 22.0% regarding the world total. A mirror picture of the above average increase of the export intensity of the CEEC-8 has been their growing competitiveness, reflected in higher market shares abroad, especially in the EU-15; the share of CEEC-8 exports in total world imports increased from 1.11% in 1990 to as much as 2.81% in 2004, and in total EU-15 imports from 1.54% to 5.38% (in 1991-2004). The result has been an ever growing importance of EU-15 markets for CEEC-8 exports. The EU-15 is now by far the dominant foreign market of the CEEC-8, which in 2004 absorbed 65.9% of CEEC-8 exports, as compared to 46.0% in 1990. Yet another feature of CEEC-8 export expansion has been a major structural shift in favor of medium and high skill and technology intensive manufactures in exports; in 1995-2004 the share of these manufactures in CEEC-8 exports increased from only 36.0% to 56.1%. The magnitude of the above trends and structural changes varies among individual countries, but the direction is the same in all of them. In spite of the fact that the CEEC-3 have also improved their export performance considerably since 1990 and that they experienced similar structural changes in exports, the scale of the improvement and structural changes has been much more modest than in the CEEC-8 (See Appendix for detail).

The objective of the paper is to look at the determinants of the impressive growth of transition economies' export performance. Based on the relevant theoretical concepts, we follow the approach of Redding and Venables (2003, 2004), and Fugazza (2004), and distinguish between market access and supply capacity determinants of export performance. We build an econometric model in order to assess the determinants of export performance in two steps; first, we assess the contribution of market access, in general and to the EU-15, vs. supply capacity improvement, and, second, we assess the importance of individual factors determining

the supply capacity. Following the gravity approach, the proximity and size of the EU market, accompanied by the EU integration process, are rather self-evident factors contributing to the improved market access of the transition economies. Factors determining the supply capacity are numerous, but so far their impact on the transition economies' export performance has not been fully assessed in the literature. In analyzing the supply capacity factors, we broaden the concept of Redding and Venables (2003, 2004) and Fugazza (2004) by including the impact of structural changes, productivity growth, foreign direct investment (FDI) penetration and institutional (transition) setting in the model.

The paper is structured as follows. Section two looks at the determinants of the transition economies' growing export performance, as put forward by the literature. In section three we construct an econometric model in order to account for the contribution of market access vs. supply capacity improvement to export performance. Section four assesses the importance of individual supply capacity factors, and the last section presents the conclusions.

2. DETERMINANTS OF THE TRANSITION ECONOMIES' EXPORT PERFORMANCE

By far the most popular approach to an analysis of CEEC export performance is that inspired by gravity theory (Collins and Rodrik, 1991; Havrylyshyn and Pritchett, 1991; Rosati ,1992; Hamilton and Winters, 1992; Baldwin, 1994; Kaminski, Wang, and Winters, 1996a; Jakab, Kovacs, and Oszlay, 2001; Havrylyshyn and Al-Atrash, 1998; Egger, 2003; Fidrmuc and Fidrmuc, 2003; Bussiere, Fidrmuc, and Schantz, 2005). The gravity models suggest that the lifting of central planning restrictions on foreign trade, the transition to market economies, and the independence of new countries have led to an increase in and geographical restructuring of foreign trade along the lines of gravity theory, i.e. the foreign trade intensity of the CEEC increased to a great extent and the EU-15, as a large, near, and highly developed market, assumed the role of the predominant trading partner. The CEEC have gradually approached the "normal" level of trade with developed countries, especially the EU, but there are considerable differences among individual countries.

Redding and Venables (2003, 2004), and on that basis, Fugazza (2004) developed a model of trade which uses gravity techniques to estimate to what extent the export growth of a country is due to changed access to foreign markets and to what extent it is due to changes in the internal supply capacity of the exporting country. The internal supply capacity is regressed to variables such as GDP, population, internal transport costs, and one or two institutional variables (real exchange rate fluctuations, risk of expropriation, labor market characteristics). Their results suggest that, all in all, market access has been more important than supply capacity for the increasing export performance of the CEEC. In Redding and Venables (2003), foreign market access growth was a much more important source of export growth than supply capacity growth. The main component of foreign market access growth was Western Europe (i.e. the EU). Nevertheless, the actual level of trade of Eastern Europe is lower than one would expect with regard to good market access and better than average internal geography and institutions. This is because the transition countries are faced with supply capacity constraints. The results of Fugazza are more ambiguous. In the first phase of transition (1988-95), foreign market access was much more important for the export growth of the CEEC than supply capacity growth, while the situation in 1992-99 was quite the opposite. It is more or less

obvious that the beginning of the transition was characterized by the opening of the markets in the and elsewhere, while the supply capacity was not able to exploit the new opportunities.[1]

Apart from fundamentals of gravity theory, the literature puts forward five factors which deserve special attention when analyzing CEEC export performance: improved access to the EU market, changes in export structure, increased levels of productivity, the role of FDI, and institutional changes. These factors will be tested as determinants of the transition economies' export performance in the model.

Improved access of the transition economies to EU markets. One of the most outstanding features of the transition economies' export performance since the beginning of the transition process is the increasing importance of the EU-15 as the main market for their exports. Most of this development is explained by gravity theory, i.e. by the fact that pre-transition trade with the EU-15 was well below the 'normal' level. The size, proximity, and development level of the EU-15 is an extremely strong gravity force for CEEC exports. In addition to that, the EU integration process has provided these countries with preferential access to EU-15 markets. How important has this institutional factor been? The literature suggests that preferential market access, especially the Europe Agreements, provides the transition economies with a competitive edge over suppliers from other countries and has clearly been important for increasing the volume of CEEC trade, but has not been directly responsible for much of the growth of their exports (Kaminski, Wang, and Winters, 1996b, p. 34). This is so because the scope of preferential treatment has been limited by a number of inherent limitations (antidumping procedures, tight rules of origin, delays in liberalizing imports of sensitive products) (Kaminski, 1994), which were removed only gradually in the process of EU integration, and even more so because other basic factors of export performance have been more important for export expansion.

Structural changes in the transition economies' exports. Since the beginning of the transition process, the export structure of the transition economies has undergone significant structural changes in terms of an increasing share of medium and high skill and technology intensive manufactures and the corresponding decrease in the share of primary commodities, labor intensive and resource based products, and of low skill and technology intensive manufactures (Table 1). CEEC export structures show a tendency of gradual convergence with the export structures of the EU-15 (Crespo and Fontoura, 2007). Here the question is to what extent the structural upgrading of exports has contributed to the growing export performance of CEEC.

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Table 1 about here

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There is no such thing as 'optimal economic structure', nevertheless, extensive literature on the structural changes in CEEC exports tends to claim that structural upgrading positively contributed to export performance. Thus, Aturupane, Djankov, and Hoekman (1997), Hoekman and Djankov (1996), and Kaminski and Ng (2001) all find a strong relationship between the export performance of the CEEC and growth in vertical intra-industry trade with the EU. The increasing level of vertical intra-industry trade is due to the increasing integration of transition economies into the production and marketing networks of EU companies. Dulleck, Foster, Stehrer, and Woerz (2004, pp. 23-24) analyze export specialization and quality upgrading in the CEEC. They consider three dimensions of export quality upgrading, i.e. shifts from

low to high tech industries, shifts from low to high quality segments within industries, and quality improvements inside quality segments within industries. They claim that the CEEC have successfully upgraded the quality of their exports. The composition of these exports has moved towards high-tech industries and the unit values of exports have increased in nearly all industries and quality segments. Furthermore, their unit value ratios compared to the EU also increased in most quality segments. However, while five Central European countries (the Czech Republic, Hungary, Poland, Slovakia, and Slovenia) appeared to be successful regarding a substantial quality upgrading of their export structure according to all three dimensions, Bulgaria and Romania, and the Baltic countries evidence the tendency of increasing specialization in low-quality segments of high tech industries.

Increased levels of productivity in the transition economies. Productivity growth has been another (potential) source of the growing export performance of the CEEC. The productivity growth of the CEEC has been remarkable since the beginning of the transition process, and since 1995 also much faster than in the EU-15 (see Table 2). The result is a strong productivity catching-up process in the CEEC-8. Unfortunately, there is no econometric analysis available which would assess the impact of productivity growth on CEEC export performance. Bernard and Jensen (1998), who analyzed the U.S. export boom in 1987-1994, claim that aggregate productivity gains therein from 1987-1992 accounted for under 10% of overall export growth; the dominant sources of the export boom were foreign income growth and exchange rate changes.

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Table 2 about here

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The role of FDI in the growing export performance of the transition economies. The importance of FDI for the transition economies' exports is very high and increasing. Foreign subsidiaries are responsible for the majority of exports in most of the transition economies. Foreign subsidiaries, which are on average highly export oriented, are especially important for exports in high and medium-high tech industries (Table 3). Foreign subsidiaries also show much faster restructuring towards high- and medium-high- tech exports and much higher export propensity than domestic enterprises (see Damijan and Rojec, 2004).

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Table 3 about here

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In spite of the remarkable contribution of FDI to the export performance of the CEEC, the causal relationship between export propensity and strategic foreign ownership remains ambiguous. The issue whether foreign ownership as such, after normalizing for all other differences between foreign subsidiaries and domestic firms, matters as far as export propensity is concerned, has long been discussed in the literature. It seems that most of the superior export propensity of foreign subsidiaries is explained by factors other than foreign ownership, multinationality being a very important one (Pfaffermayr and Bellak, 2000, Rojec, Damijan, and Majcen, 2004).

Transition from socialist to market economies: a complete change of institutional setting. Rodrik, Subramanian, and Trebbi (2002) find that institutional quality has a positive and significant effect on (trade) integration. Integration also has a (positive) impact on institutional quality but it is the quality of institutions which is the most important. Gravity models also recognize that the business environment is an important determinant of a country's export performance, i.e., of the costs of

exporting, and then use some measure of institutional quality, such as the protection of property rights, the risk of expropriation (Redding and Venables, 2003; Fugazza, 2004), etc. In the case of transition countries we are dealing with countries that have gone through an overwhelming change of the entire socioeconomic system and the building of institutions. Therefore, taking some narrow measure of institutional setting - for instance, the risk of expropriation - as a proxy for institutional quality would be too narrow in the case of transition countries. What we need for the CEEC is a complex measure of the reform process. The most commonly used indicator of reform progress is the EBRD transition index. In 1991-2005, the CEEC-8 and the CEEC-3 altogether increased their overall EBRD transition index from only 1.79 (the minimum being 1) to 3.68 (EBRD, 1999, 2000, 2002, 2003, 2004, 2005), which is near to the level of an 'ideal' advanced market economy with an index of 4.3.[2]

Thus, how important has the major institutional transformation of the CEEC been for their export performance? In the most basic sense, the transformation from a centrally planned to a market economy has been the only real *sine qua non* of growing export performance. Without that, the fundamentals of gravity theory would not be allowed to work at all, there would be artificial barriers to normal foreign trade flows and there would be no real expansion of trade with the EU and the broader world. But once we go beyond this basic understanding of institutional setting, once we open up the economies and allow gravity theory fundamentals to work, the question arises of how important institutional reforms have been for the growing export performance of transition economies. The existing literature on the subject (Havrylyshyn and Al-Atrash, 1998; Kaminski, 1993; Kaminski, Wang, and Winters, 1996b) is pretty straightforward, stating that the speed and scope of transition reforms have been crucial for the growth of export performance.

3. ACCOUNTING FOR THE CONTRIBUTION OF MARKET ACCESS VS. SUPPLY CAPACITY IMPROVEMENT TO EXPORT PERFORMANCE

In this section we assess the contribution of foreign market access vs. internal supply capacity improvement to the export growth of the individual CEEC. This approach consists of two steps. In the first step we quantify the respective roles of foreign market access and supply capacity as two key determinants of the export performance of a given country. In the second step we then use the estimates obtained in the first stage of the analysis in order to construct supply capacity and foreign market access series. These serve as an analytical tool for revealing the importance of the supply capacity of the exporting economy and of foreign market access for a country's export performance.

Decomposition of export performance

Total export growth can be decomposed into supply capacity and foreign market access growth. Following the approach of Redding and Venables (2003, 2004) and Fugazza (2004), we estimate a gravity model equation where the dependent variable is exports (logarithmic) from country *i* to country *j* and the dependent variables are bilateral distance (logarithmic), an indicator of the existence of a common border, exporter-country dummies, and importer-partner dummies:

(1) $$\ln X_{ij} = \alpha + \beta_j Partner_j + \gamma_i Country_i + \delta_1 Dist_{ij} + \delta_2 Bord_{ij} + u_{ij}$$

Bilateral distance $Dist_{ij}$ and the border dummy $Bord_{ij}$ are assumed to capture geographical bilateral trade costs. Exporters' and importers' fixed effects, $Country_i$

and $Partner_j$, respectively, are introduced in order to control for supplier capacity and market capacity. These terms can also serve as a control for institutions and policy related bilateral trade costs.

The model is estimated for 11 CEEC (CEEC-8 and CEEC-3) at the level of the aggregate trade flows of these countries with their most important trading partners from all over the world. The data set spans the period 1994-2004, which makes a balanced panel for 11 years. Bilateral trade flows, distance measures, and GDP data were obtained from the UN COMTRADE and CEPII databases.

Model (1) is estimated year-by-year in order to allow for annual variations in estimated individual parameters of interest. A simple OLS estimator is used in these exercises. The results are presented in Table 4. Estimated coefficients of geographical distance are of the same size as those obtained by Fugazza (2004) for a larger and more heterogeneous data set. There is not much variation in estimated coefficients over time, indicating the robust importance of transport costs for the export performance of individual CEEC. On the other hand, the coefficients for border dummies are two to three times higher than those obtained by Redding and Venables (2003) and Fugazza (2004), but decrease over time. This indicates the high importance of cross-border trade for the CEEC, which, however, has been diminishing with the economic integration and economic development of these countries over the last decade. With closer integration into the EU economic area and with high rates of productivity growth, the relative importance of transport costs might well be decreasing and domestic firms can increasingly afford to bear the costs of shipping goods to non-neighboring countries. In 2004, however, the coefficient for border effects on trade was still twice that of those estimated in the above mentioned studies.

We introduce exporters' and importers' fixed effects, $Country_i$ and $Partner_j$, where the former serves to control for supplier capacity, and the latter for foreign market capacity. Exporter countries' parameters are mostly positive and significant as expected, with the exception of the three Baltic states and Croatia, where negative and significant parameters are revealed. This may indicate the divergent evolution of domestic supply capacities in these countries. In all of the other countries exporter country coefficients are in line with expectations and reveal positive increasing trends over time, indicating a rise in domestic supply capacities. In accordance with the process of trade liberalization with the EU in the 1990s, the EU market predominates over other importer dummies. The importance of other OECD countries is about 60% of that of the EU markets, while the importance of trade with other CEEC-8 and CEEC-3 is much lower.

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Table 4 about here

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Accounting for supply capacity and foreign market access

In the second step the estimates obtained in the first stage of the analysis (estimates of model (1)) are used to construct supply capacity and foreign market access series. The supply capacity estimate for country *i* (SC_i) is given by the exponential of exporter country dummy, times its coefficient:

(2) $$SC_i = \exp(\hat{\gamma}_i Country_i)$$

While the foreign market access estimate (FMA_i) is given by:

(3) $$FMA_i = \sum_{i \neq j} \exp(\hat{\beta}_j Partner_j) * Dist_{ij}^{\hat{\delta}_1} * \exp(\hat{\delta}_2 Bord_{ij}).$$

The estimates of supply capacity (2) and foreign market access (3) allow us to decompose the sources of export growth over the last decade and help us to analyze over time the contribution of both the supply capacity and the foreign market access to the export performance of each individual CEEC.

As revealed in Figure 1, the evolution of exports as well as of supply capacity and foreign market access are remarkably uniform across the individual CEEC. Some variation in the export figures around the common increasing trend of exports is present. This variation is higher in the period 1994-2000, but then dies out in the period 2000-2004. Table 5 further demonstrates some differences in export performance among both groups of CEEC. It is shown that the CEEC-8 has increased its exports at a faster pace than the CEEC-3 in the periods 1994-1996 and 1996-1998 (33% and 46% as compared to 11% and 9% in terms of bi-annual growth rates), while recently both groups of countries converged at similar growth rates of exports (27% to 28% in terms of bi-annual growth rates).

The contribution of market access improvement vs. that of supply capacity upgrading to export growth is almost identical for the CEEC-8 and the CEEC-3. In both groups of countries the contribution of supply capacity upgrading was initially dominant but has gradually been decreasing (i.e. from 94.3% in 1994-96 to 24.5% in 2002-04 for the CEEC-8, and from 89.7% to 22.7% for the CEEC-3). The opposite is true for foreign market access improvement, whose contribution to export growth increased remarkably, i.e. from 5.7% to 75.5% for the CEEC-8, and from 10.3% to 77.3% for the CEEC-3. Liberalization of foreign trade along lines with the WTO standards and, above all, the EU integration processes seem to have decisively improved foreign market access for the CEEC.

This is confirmed also by Table 6, which illustrates decomposition of foreign market access into five regional components: the EU-15, the 2004 new EU member states (the CEEC-8, Cyprus, Malta), the CEEC-3, three South East European countries (Albania, Macedonia, and Serbia and Montenegro), and non-EU OECD countries. Improving access to EU-15 markets has been decisive, but growth of exports to the EU-15 has contributed significantly more to the overall export growth of the CEEC-8 than of the CEEC-3. Throughout the whole 1994-2004 period, the EU-15 contributed approximately two thirds to the overall foreign market access growth of the CEEC-8. In the case of the CEEC-3, the contribution of the EU-15 was much lower, but was constantly increasing (from 28.6% in 1994-96 to 38.5% in 2002-04). Compared to the CEEC-8, the CEEC-3 have benefited much more from the export growth to the non-EU OECD and South East Europe countries.

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Figure 1 about here

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Table 5 about here

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Table 6 about here

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4. THE IMPORTANCE OF SUPPLY CAPACITY FACTORS

In section two we surveyed the most important determinants of domestic supply capacity as identified in the literature. In this section we empirically take into account these determinants. We contribute to the field by accounting for the impact of individual determinants on the evolution of the supply capacity of the transition countries, i.e. we account for the impact of structural changes, productivity growth, FDI penetration, and institutional (transition) changes on supply capacity in the model. Existing studies have not included these factors as explanatory variables of supply capacity in the model. If we suppose that the factors determining export performance are decomposed into the foreign market access and supply capacity factors as follows:

(4) $$X_{ij} = f\left(SC_i, FMA_{ij}\right),$$

of which, as we saw in equation (3), the foreign market access variable is a composite variable:

(5) $$FMA_{ij} = g\left(GDP_j, GDPpc_j, Dist_{ij}, Bord_{ij}, Lang_{ij}, \mathrm{Re}\,gion_{ij}\right).$$

FMA contains the impacts of the importing country's *j* characteristics, such as level and growth of GDP and GDP per capita, as well as factors affecting costs related to trade flows, i.e. trade costs, tariff and non-tariff barriers to trade, which are usually picked up by the distance variable. There are also some other factors fostering bilateral trade, such as similarity in consumer preferences, common language and cultural similarities, etc., which we usually claim to control for by including dummy variables for common border, language, and region.

On the other hand, the variables affecting supply capacity are those affecting the economic potential of the exporting country and its ability to adjust to the changing global demand patterns. Supply capacity can hence be written as a function:

(6) $$SC_i = h\left(GDP_i, GDPpc_i, FDI_i, C_i, Tech_i, I_i, ER_i\right),$$

where GDP and GDP per capita explain the economic potential of the exporting country, while FDI, productivity level (C_i), level of technological development ($Tech_i$), real exchange rate (ER_i), and institutional changes (I_i) affect the exporting country's ability to adjust to the changing global demand patterns.

Hence, the model we estimate to verify the importance of the above supply capacity factors for CEEC export performance is as follows:

(7) $$\ln X_{ijt} = \alpha + \beta_1 \ln FMA_{ijt} + \beta_2 \ln GDP_{it-1} + \beta_3 \ln FDI_{it-1} + \beta_4 C_{it} + \\ + \beta_5 ER_{it} + \beta_6 Tech_{it} + \beta_7 TI_{it} + u_{it}$$

where FMA_{ij} accounts for foreign market characteristics contained in (5). We include FDI as the share of FDI stock in gross fixed capital formation. Due to possible endogeneity, i.e. the correlation with current exports flow, we include both GDP and FDI lagged by one year. Productivity level (C_i) is measured in terms of unit labor cost (ULC[3]), while the level of technological development ($Tech_i$) is measured as a share of medium high and high tech industries in a country's total exports. Finally, the quality and changes in a country's institutional setup are proxied by either of the two standard EBRD indices, i.e. the EBRD transition index for trade and foreign exchange system or the EBRD transition index (an average of individual indices).

The gravity model (7) is estimated both in levels as well as in first differences. The estimations in levels indicate the importance of individual supply capacity factors for the level of export performance with individual importing countries. We follow

the approach of Egger (2003), who suggests estimating the gravity model using the full data set pooled over years and individual countries in order to make use of the full set of information contained in the data. We therefore employ standard panel data techniques, such as a random and fixed effects model, in order to take into account a country pair's individual (fixed or random) effects. The random effects estimator has been proven by the standard Hausman test as being the more efficient estimator.

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Table 7 about here

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Results of the estimations in levels are presented in Table 7. We estimate the model by successively including additional variables into the model in order to provide some kind of robustness checks for our estimations. In the first model both the supply capacity and foreign market access variables, which have been estimated previously by estimating model (1), are shown to have a significant impact on exports. In the second model we swapped the composite supply capacity variable for one of its components, i.e. the GDP level of the exporting country, while in the third model we add FDI and the EBRD transition index for the trade and foreign exchange system. Exporting country GDP level and institutional setup are shown to have a strong impact on export performance. Among other determinants of supply capacity (see models 4 and 5), one can confirm a negative impact of real exchange rate appreciation and of a lower productivity level on export flows. Interestingly, FDI and consequent technological restructuring do not seem to affect the level of exports. However, the level of exporting country technological development (measured as a share of medium-high and high tech industries in exports) does contribute positively to a country's export performance.

Before making any conclusions, we proceed by estimating the model in first differences, i.e. growth rates. This is not only to eliminate the country pair's fixed effects, but predominantly because it allows us to take into account the impact of changes in the country's supply capacity on exports growth. We are especially interested in uncovering how indigenous productivity growth, technological restructuring, FDI, and changes in the institutional setup affects a country's export performance. The results in Table 8 are reassuring. First, the results demonstrate that the CEEC with higher levels of accumulated FDI do exhibit much larger growth of exports. This points towards the dynamic aspect of FDI, i.e. FDI does foster manufacturing restructuring and creates the economic potential for future export growth.[4] Second, changes in the institutional setup (measured by the EBRD trade index or the EBRD overall transition index) do significantly increase the growth rates of exports. Hence, the more ambitious CEEC in terms of ongoing structural reforms and building of a stable institutional setup are more successful in fostering exports growth. Third, successful restructuring of individual CEEC shows up in lower labor unit costs, which in turn improves the competitiveness of exporters and increases exports.

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Table 8 about here

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Based upon the above empirical findings, one can draw important policy conclusions. It is obvious that openness and unrestricted access to many foreign markets increase the capacity of a country regarding successful export performance. It is, however, of extreme importance that countries work on their internal supply capacity improvements in order to build up export performance. The key policy

measures that should be focused on by less developed transition countries (the CEEC-3, candidate countries for EU membership, as well as the successor states of the former Soviet Union) are predominantly the building of a stable institutional setup, ongoing structural reforms, and targeted FDI penetration.

5. CONCLUSIONS

The paper looks at the reasons behind the impressive growth of the transition economies' export performance in the last decade. We follow the empirical approach of Redding and Venables (2003. 2004) and Fugazza (2004), which helps us to decompose the export performance of individual countries into foreign market access factors and factors related to internal supply capacity building. The contribution of market access improvement vs. that of supply capacity upgrading to export growth is almost identical for the CEEC-8 and the CEEC-3. In both groups of countries the contribution of supply capacity upgrading was initially dominant but has been gradually decreasing. The opposite is true for foreign market access improvement, whose contribution to export growth increased remarkably in 1994-2004. Within foreign market access, improving access to EU-15 markets has been decisive, but growth of exports to the EU-15 has contributed significantly more to the overall export growth of the CEEC-8 than of the CEEC-3. Compared to the CEEC-8, The CEEC-3 seem to have benefited much more from export growth to the non-EU OECD and South East Europe countries.

We amend the standard econometric gravity model by including some specific factors determining the evolution of the supply capacity of transition countries. Our results are very conclusive. We find first that the CEEC with higher levels of accumulated FDI do exhibit much larger growth of exports. This points towards the dynamic aspect of FDI, i.e. FDI does foster manufacturing restructuring and create the economic potential for future export growth. Second, changes in the institutional setup (measured by the EBRD trade index or the EBRD overall transition index) do significantly increase the growth rates of exports. This demonstrates that the more ambitious CEEC in terms of ongoing structural reforms and building of a stable institutional setup are more successful in fostering export growth. Third, successful restructuring of individual CEEC showing up in increased productivity improves the competitiveness of exporters from these countries and increases exports. Policy messages for the improvement of the supply capacity, thus, go in the direction of building a stable institutional setup, structural reforms, and targeted FDI penetration.

NOTES

1. Other ‘horizontal’ approaches to the analysis of the transition economies’ export performance include shift-share analysis (Havlik, Landesmann and Stehrer, 2001), synthetic index of export performance (Kaminski, Wang, and Winters, 1996b), and (export) competitiveness analysis (Halpern, 2002; IMD, 2004; Zinnes, Eilat, and Sachs, 2001; Havlik, 2000).
2. For a detailed definition and concept of the EBRD transition index, see EBRD (1999). EBRD does not include an overall indicator in its tables, it does, however, carry out analyses in its reports using such an aggregate (EBRD, 1999: charts 2.1-2.4; see Zinnes, Eilat, and Sachs, 2001, p. 335).
3. Unit labour cost (ULC) is defined as a ratio of labour cost to the labour productivity level. An increase in the ULC hence indicates deterioration of the country's productivity.
4. One should note, however, that it is the levels (not changes) of accumulated FDI that enhance export growth.

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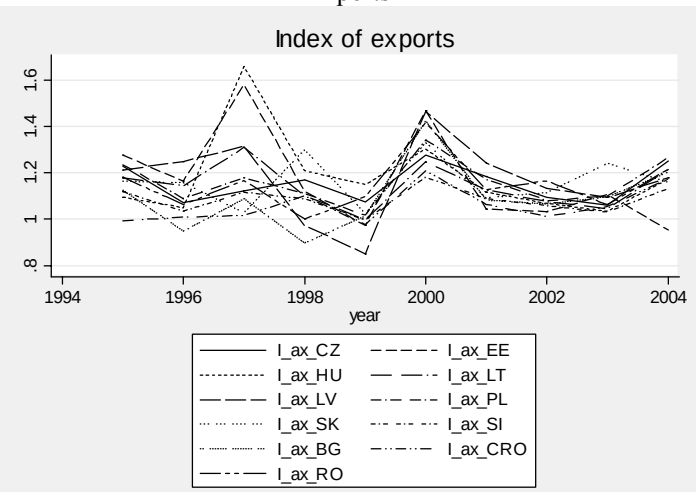
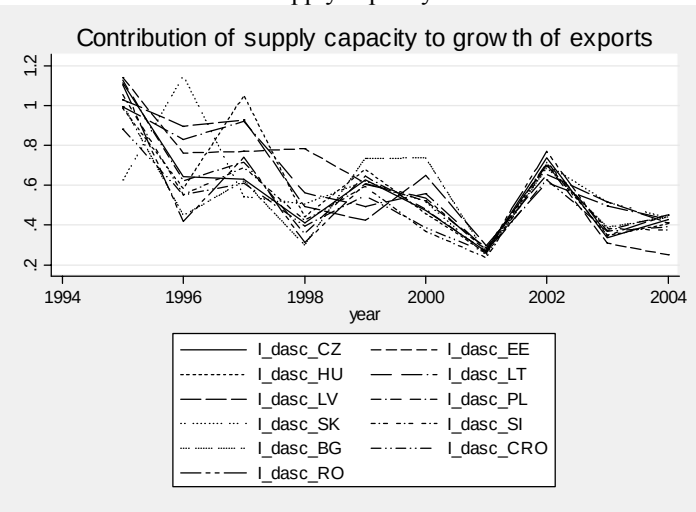
Figure 1: *Growth index for exports, supply capacity and foreign market access*

Exports



Supply capacity



Foreign market access

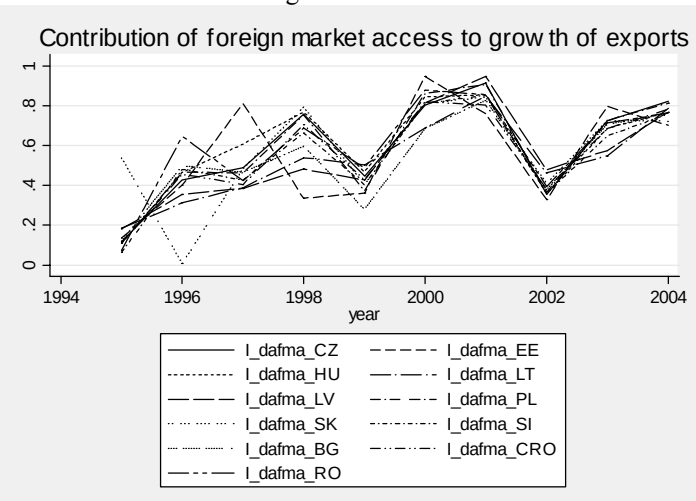


Table 1. *Structure of Merchandise Exports of 2004 New EU Member States (CEEC-8, Cyprus, Malta) According to UNCTAD Classification[a], 1995-2004, %*

	1995	*2000*	*2001*	*2002*	*2003*	*2004*
Primary commodities	28.2	19.6	19.0	18.3	17.9	17.4
Labor intensive and resource based manufact.	19.7	16.7	16.6	16.0	14.6	13.6
Low skill and tech intensive manufact.	14.1	10.4	10.9	10.3	10.6	10.9
Medium skill and tech intensive manufact.	21.4	32.6	32.8	33.9	34.9	35.9
High skill and tech intensive manufact.	14.6	18.9	18.2	19.7	20.0	20.2

Source: UNCTAD (2003), own calculations.
Note: [a] See UNCTAD (2002, Classification of world merchandise exports, Annex 1 to chapter III). The classification does not classify all commodities, therefore, the sum of the shares of five commodity groups does not add to 100%.

Table 2. *Productivity[a] Growth Rates in CEEC-8, 1990-2003*

	1990-1995		*1995-2003*	
	Cumulated	*Annual average*	*Cumulated*	*Annual average*
	Growth rates			
Total economy	9.6	1.9	39.5	4.3
Manufacturing[b]	n.a.	n.a.	79.1	8.7
Productivity growth differential between CEEC-8 AND EU-15, in percentage points[c]				
Total economy	-0.5	0.0	32.0	3.4
Manufacturing[b]	n.a.	n.a.	62.7	6.5

Source: Havlik, 2005, pp. 3 and 21.
Notes: [a] For total economy in terms of GDP per person employed, and for the manufacturing in terms of gross value added in constant prices per employee. [b] For manufacturing 1995-2002. [c] Growth rates in CEEC-8 minus growth rates in EU-15.

Table 3. *Export Related Indicators of Manufacturing Foreign Subsidiaries[a] in Selected CEEC-8, 2001, %*

	Czech Republic	*Estonia*	*Hungary*	*Poland*	*Slovenia*
Share of foreign subsidiaries in total manufacturing exports					
TOTAL	69.3	48.5	87.9	66.2	36.8
High tech industries	n.a.	76.0	97.6	89.9	47.0
Medium-high tech industries	n.a.	58.1	92.0	69.1	43.5
Medium-low tech industries	n.a.	39.4	72.3	49.7	23.1
Low tech industries	n.a.	43.7	69.3	68.5	35.7
Exports to sales ratio					
High technology industries	n.a.	72.7	90.1	50.6	76.2
Medium-high technology industries	n.a.	78.1	81.6	50.9	80.7
Medium-low technology industries	n.a.	53.6	32.5	19.1	74.5
Low technology industries	n.a.	62.0	33.8	23.9	55.7

Source: WIIW (The Vienna Institute for International Economic Studies) data base.
Note: [a] Enterprises with 10% or higher foreign equity share.

Table 4. *Bilateral trade equation estimation (with country and partner dummies) for CEEC [period 1994-2004, OLS estimator]*

ln(X_{ij})	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Ln($dist_{ij}$)	***-0.778	***-0.781	***-0.853	***-0.728	***-0.922	***-0.899	***-0.807	***-0.831	***-0.826	***-0.885	***-0.861
	-7.83	*-7.97*	*-9.31*	*-8.76*	*-10.68*	*-10.59*	*-10.07*	*-10.2*	*-9.91*	*-10.63*	*-10.15*
$Border_{ij}$	***1.600	***1.618	***1.392	***1.758	***1.360	***1.326	***1.486	***1.447	***1.338	***1.255	***1.263
	4.51	*4.70*	*4.21*	*5.91*	*4.33*	*4.27*	*5.05*	*4.81*	*4.36*	*4.07*	*4.03*
CZ	***1.333	**1.254	***1.612	***1.478	***1.792	***1.961	***2.169	***2.127	***2.186	***2.016	***2.012
	2.58	*2.50*	*3.30*	*3.38*	*3.87*	*4.34*	*5.13*	*4.91*	*4.95*	*4.54*	*4.46*
EE	***-2.975	***-3.183	***-2.282	***-1.296	***-1.363	***-1.195	**-0.907	**-0.840	**-0.873	**-0.847	***-1.527
	-6.1	*-6.69*	*-4.96*	*-3.11*	*-3.14*	*-2.84*	*-2.32*	*-2.10*	*-2.14*	*-2.06*	*-3.67*
HU	*0.844	0.720	**0.992	***1.143	***1.507	***1.742	***1.885	***1.960	***1.985	***1.888	***1.940
	1.67	*1.46*	*2.07*	*2.66*	*3.31*	*3.93*	*4.56*	*4.62*	*4.59*	*4.34*	*4.40*
LV	***-2.275	***-2.637	***-2.175	***-2.240	***-1.893	***-1.808	***-1.585	***-1.818	***-1.687	***-1.967	***-1.748
	-4.62	*-5.45*	*-4.68*	*-5.39*	*-4.34*	*-4.26*	*-4.03*	*-4.53*	*-4.11*	*-4.79*	*-4.20*
LT	***-2.509	***-2.083	***-2.166	***-1.571	***-1.553	***-1.723	***-1.312	***-1.563	***-1.374	***-1.278	***-1.415
	-5.19	*-4.36*	*-4.71*	*-3.8*	*-3.55*	*-4.07*	*-3.34*	*-3.92*	*-3.38*	*-3.13*	*-3.42*
PL	***1.592	***1.443	***1.791	***1.765	***2.082	***2.215	***2.411	***2.423	***2.393	***2.357	***2.501
	3.09	*2.88*	*3.67*	*4.04*	*4.5*	*4.92*	*5.73*	*5.62*	*5.44*	*5.33*	*5.57*
SK	0.293	0.405	0.296	0.146	0.390	0.643	*0.819	*0.763	*0.762	**0.931	**0.957
	0.55	*0.77*	*0.61*	*0.34*	*0.85*	*1.43*	*1.95*	*1.77*	*1.73*	*2.11*	*2.14*
SI	0.008	-0.213	0.124	0.190	0.533	*0.793	*0.780	*0.769	*0.770	0.638	0.663
	0.02	*-0.43*	*0.26*	*0.44*	*1.18*	*1.80*	*1.90*	*1.83*	*1.79*	*1.48*	*1.51*
BG	0.278	0.202	*0.319	*0.284	*0.305	*0.326	**0.414	**0.420	**0.436	**0.397	**0.436
	1.41	*1.07*	*1.72*	*1.71*	*1.73*	*1.90*	*2.57*	*2.54*	*2.59*	*2.34*	*2.53*
CRO	***-1.151	***-1.238	***-1.359	***-1.248	***-1.008	***-0.864	***-1.008	***-0.925	***-1.060	***-1.047	***-1.130
	-3.56	*-3.97*	*-4.47*	*-4.59*	*-3.50*	*-3.04*	*-3.76*	*-3.37*	*-3.78*	*-3.71*	*-3.95*
Partner dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
EU	***2.124	***2.291	***2.113	***2.064	***2.278	***2.683	***2.757	***2.810	***3.013	***3.073	***3.144
	8.93	*9.86*	*9.48*	*10.3*	*10.81*	*12.93*	*14.07*	*14.04*	*14.77*	*15.00*	*15.13*
CEEC-8	***0.795	***0.873	***0.824	***0.730	***0.864	***1.131	***1.220	***1.280	***1.510	***1.564	***1.765
	2.48	*2.80*	*2.77*	*2.74*	*3.07*	*4.09*	*4.69*	*4.81*	*5.57*	*5.74*	*6.38*
CEEC-3	0.203	0.364	0.060	-0.121	0.100	0.450	0.365	0.342	**0.835	***1.142	***1.430
	0.47	*0.88*	*0.15*	*-0.34*	*0.26*	*1.19*	*1.02*	*0.93*	*2.23*	*3.03*	*3.74*
OECD	***1.549	***1.597	***1.506	***1.372	***1.525	***1.769	***1.784	***1.791	***2.029	***2.086	***2.173
	8.06	*8.4*	*8.39*	*8.45*	*9.08*	*10.73*	*11.48*	*11.36*	*12.59*	*12.93*	*13.27*
# obs	791	756	799	787	827	843	858	886	880	887	901
Adj R-sq.	*0.597*	*0.607*	*0.604*	*0.598*	*0.627*	*0.659*	*0.670*	*0.680*	*0.674*	*0.685*	*0.697*

Notes: ln(X_{ij}) is log bilateral exports from country *i* to partner *j* plus one; ln($dist_{ij}$) is bilateral distance between countries *i* and *j*; $border_{ij}$ is a dummy for a common border. *t*-statistics in italics; ***, **, and * denote significance of parameters at 1%, 5% and 10%, respectively.

Table 5. *Components of export growth, 1994-2004*

	Export index					*Contribution to export index (in %)*									
						Supply capacity growth					*Foreign market access improvement*				
	1994-96	*1996-98*	*1998-00*	*2000-02*	*2002-04*	*1994-96*	*1996-98*	*1998-00*	*2000-02*	*2002-04*	*1994-96*	*1996-98*	*1998-00*	*2000-02*	*2002-04*
Czech Republic	1.31	1.31	1.37	1.29	1.33	93.6	41.1	45.4	37.9	19.4	6.4	58.9	54.6	62.1	80.6
Estonia	1.48	1.77	1.43	1.08	1.05	94.1	68.9	48.1	44.5	12.2	5.9	31.1	51.9	55.5	87.8
Hungary	1.15	2.01	1.50	1.19	1.21	91.9	49.8	44.1	37.6	21.2	8.1	50.2	55.9	62.4	78.8
Lithuania	1.51	1.28	1.24	1.41	1.29	93.5	71.1	44.2	30.0	32.5	6.5	28.9	55.8	70.0	67.5
Latvia	1.35	1.44	1.24	1.21	1.27	93.5	71.2	44.4	30.1	33.0	6.5	28.8	55.6	69.9	67.0
Poland	1.35	1.31	1.36	1.27	1.39	93.2	42.4	49.1	36.5	22.2	6.8	57.6	50.9	63.5	77.8
Slovakia	1.35	1.34	1.36	1.22	1.44	99.4	41.7	49.4	33.7	30.0	0.6	58.3	50.6	66.3	70.0
Slovenia	1.16	1.21	1.18	1.15	1.17	94.9	50.7	40.0	35.0	22.6	5.1	49.3	60.0	65.0	77.4
Bulgaria	1.07	0.98	1.44	1.15	1.32	88.1	40.2	73.9	35.9	24.2	11.9	59.8	26.1	64.1	75.8
Croatia	1.00	1.12	1.18	1.08	1.24	90.5	45.9	37.7	34.8	21.2	9.5	54.1	62.3	65.2	78.8
Romania	1.25	1.17	1.55	1.31	1.29	90.4	44.2	43.1	38.2	22.5	9.6	55.8	56.9	61.8	77.5
CEEC-8	1.33	1.46	1.34	1.23	1.27	94.3	55.0	45.7	35.5	24.5	5.7	45.0	54.3	64.5	75.5
CEEC-3	1.11	1.09	1.39	1.18	1.28	89.7	43.6	52.2	36.4	22.7	10.3	56.4	47.8	63.6	77.3
All countries	1.24	1.31	1.36	1.20	1.27	91.2	58.5	40.3	39.2	24.1	8.8	41.5	59.7	60.8	75.9

Notes: Bi-annual index of growth of exports. calculated from equations (2) and (3); and contribution of supply capacity and foreign market access to export growth (in %).

Table 6. *Decomposition of foreign market access growth by foreign markets. 1994-2004 (in %)*

	EU-15					***Contribution of*** *2004 New EU member states (CEEC-8. Cyprus and Malta)*					*CEEC-3*				
	1994-96	*1996-98*	*1998-00*	*2000-02*	*2002-04*	*1994-96*	*1996-98*	*1998-00*	*2000-02*	*2002-04*	*1994-96*	*1996-98*	*1998-00*	*2000-02*	*2002-04*
Czech Republic	73.7	76.7	73.9	73.1	73.0	8.5	8.5	10.6	11.4	13.2	1.1	1.2	1.4	1.6	2.2
Estonia	90.7	90.1	89.7	90.1	86.7	2.9	3.5	4.2	4.2	6.4	0.1	0.2	0.2	0.2	0.4
Hungary	51.2	55.8	54.5	52.8	53.9	12.0	12.2	15.0	16.1	18.3	2.5	2.9	2.9	3.4	5.0
Lithuania	50.1	54.1	54.4	52.3	53.0	16.0	16.6	18.7	20.5	23.5	0.9	1.0	1.1	1.3	1.9
Latvia	61.5	63.8	63.6	62.0	60.5	15.3	15.8	17.6	19.3	22.4	0.5	0.6	0.7	0.8	1.2
Poland	58.8	62.1	62.2	60.4	60.1	13.1	13.4	15.7	17.1	19.8	1.3	1.4	1.6	1.8	2.5
Slovakia	88.4	88.8	86.2	86.5	84.0	4.2	4.6	6.1	6.2	8.4	0.6	0.7	0.9	1.0	1.5
Slovenia	58.8	63.6	61.4	58.9	59.8	6.8	6.8	9.0	9.4	10.5	10.0	10.3	9.7	12.1	14.6
Bulgaria	19.1	24.7	27.3	25.0	31.3	2.2	2.6	4.0	4.0	5.6	1.9	2.4	2.6	3.0	4.8
Croatia	40.9	44.6	46.5	44.0	44.9	19.3	19.9	22.9	25.0	28.0	0.6	0.7	0.8	0.9	1.3
Romania	28.8	34.5	37.1	34.7	39.4	3.8	4.4	5.7	6.0	7.8	3.6	4.4	4.2	5.1	7.5
CEEC-8	63.8	69.8	68.3	66.3	66.9	10.8	9.7	12.0	13.4	15.1	1.9	2.3	2.3	2.7	3.6
CEEC-3	28.6	34.7	38.7	34.4	38.5	7.5	9.0	11.8	11.3	13.7	2.1	2.5	2.6	3.1	4.5
All countries	39.6	61.7	49.5	54.9	52.9	7.3	8.4	9.8	10.4	11.9	3.9	2.6	4.7	3.9	6.5

Table 6. *Continuation*

	Non-EU OECD countries					***Contribution of*** *South East Europe (Albania. Macedonia. Serbia and Montenegro)*					*TOTAL*				
	1994-96	*1996-98*	*1998-00*	*2000-02*	*2002-04*	*1994-96*	*1996-98*	*1998-00*	*2000-02*	*2002-04*	*1994-96*	*1996-98*	*1998-00*	*2000-02*	*2002-04*
Czech Republic	13.0	10.7	11.0	10.8	9.1	3.7	3.0	3.1	3.1	2.5	100.0	100.0	100.0	100.0	100.0
Estonia	5.6	5.6	5.3	4.9	5.7	0.6	0.6	0.6	0.6	0.7	100.0	100.0	100.0	100.0	100.0
Hungary	27.9	23.8	22.1	22.2	18.4	6.5	5.3	5.6	5.5	4.3	100.0	100.0	100.0	100.0	100.0
Lithuania	29.1	24.9	22.6	22.8	19.0	3.9	3.3	3.2	3.2	2.7	100.0	100.0	100.0	100.0	100.0
Latvia	20.1	17.5	16.0	15.8	13.9	2.5	2.2	2.2	2.1	1.9	100.0	100.0	100.0	100.0	100.0
Poland	24.0	20.7	18.3	18.5	15.8	2.8	2.3	2.3	2.3	1.8	100.0	100.0	100.0	100.0	100.0
Slovakia	5.2	4.7	5.3	4.9	4.8	1.5	1.3	1.5	1.4	1.4	100.0	100.0	100.0	100.0	100.0
Slovenia	21.0	16.7	17.1	16.9	13.0	3.4	2.7	2.8	2.7	2.1	100.0	100.0	100.0	100.0	100.0
Bulgaria	28.8	27.6	26.8	26.7	24.7	48.1	42.7	39.4	41.3	33.6	100.0	100.0	100.0	100.0	100.0
Croatia	31.6	28.3	23.5	23.9	20.7	7.6	6.4	6.4	6.3	5.1	100.0	100.0	100.0	100.0	100.0
Romania	45.7	41.4	37.8	38.6	33.1	18.1	15.3	15.2	15.6	12.1	100.0	100.0	100.0	100.0	100.0
CEEC-8	20.1	15.4	14.7	14.9	12.2	3.3	2.8	2.7	2.6	2.2	100.0	100.0	100.0	100.0	100.0
CEEC-3	35.5	32.7	30.4	30.1	26.2	26.3	21.1	16.5	21.2	17.0	100.0	100.0	100.0	100.0	100.0
All countries	25.1	18.5	20.1	17.4	15.3	24.1	8.8	15.8	13.3	13.4	100.0	100.0	100.0	100.0	100.0

Note: Contribution of individual groups of countries is calculated from bi-annual index of growth of foreign market access from equation (3). weighted by the share of individual group of countries in total exports.

Table 7. *Estimation results for gravity model with supply capacity factors for CEEC. [period 1994-2004; specification in levels; random effects estimator]*

lnX_{ij}	*1*	*2*	*3*	*4*	*5*
lnSC_i	***1.516				
	18.26				
lnFMA_i	***4.062	***5.316	***5.464	***5.715	***5.491
	6.86	*9.09*	*9.33*	*10.25*	*9.85*
lnGDP_i_1		***3.270	***3.251	***2.548	***2.629
		20.78	*20.09*	*16.19*	*16.77*
ln$FDI/GFCF_i$_1			0.023	-0.101	-0.012
			0.2	*-0.83*	*-0.1*
ln$EBRDtrade_i$			***4.321	***4.192	
			3.81	*3.73*	
ln$EBRDtotal_i$					*-2.166
					-1.64
lnER_i				***-8.728	***-9.026
				-18.45	*-18.8*
lnULC_i				***-1.619	***-1.521
				-14.37	*-12.96*
ln$Sh_MH\ tech_i$				***0.049	***0.055
				4.33	*4.69*
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
No. of obs	10801	9819	9819	9819	9819
Adj R-sq.	0.416	0.352	0.351	0.382	0.389
Prob > chi^2	0.00	0.00	0.00	0.00	0.00

Notes: lnX_{ij} is log bilateral exports from country *i* to partner *j* plus one. *t*-statistics in italics; ***. **. and * denote significance of parameters at 1%. 5% and 10%. respectively.

Table 8. *Estimation results for gravity model with supply capacity factors for CEEC. [period 1994-2004; specification in first differences; OLS estimator]*

dX_{ij}	*1*	*2*	*3*	*4*	*5*
d*GDP*$_i$	**3.222	***4.551	***4.744	**3.703	***4.532
	2.34	*2.9*	*3.36*	*2.43*	*2.93*
d*FMA*$_i$	-0.819	-0.651			
	-0.78	*-0.62*			
ln*FMA*$_i$			***1.119	***1.089	***1.185
			6.34	*6.12*	*6.58*
d*FDI/GFCF*$_i$		0.299			
		1.21			
ln*FDI/GFCF*$_i$_1			***0.217	***0.207	***0.241
			2.99	*2.79*	*3.22*
d*EBRDtrade*$_i$		**2.209	**2.487	*2.112	
		2.23	*2.52*	*2.11*	
d*EBRDtotal*$_i$					***7.081
					3.77
d*ER1*$_i$				**-1.305	**-1.235
				-2.11	*-2.01*
d*ULC1*$_i$				***-0.191	***-0.196
				-2.81	*-2.89*
d*MHT*$_i$				-0.177	0.075
				-0.5	*0.21*
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
No. of obs	9818	9818	9818	9818	9818
Adj R-sq.	0.056	0.056	0.060	0.062	0.063
Prob > chi2	0.00	0.00	0.00	0.00	0.00

Notes: dX_{ij} is rate of growth of bilateral exports from country *i* to partner *j* plus one. *t*-statistics in italics; ***. **. and * denote significance of parameters at 1%. 5% and 10%. respectively.

Appendix: *Main export related indicators of CEEC-8. CEEC-3. EU-15 and World in 1990-2004 (in mill. EUR current prices and %)*

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
WORLD															
Exports of goods (in EUR)	2744364	2825290	2899256	3220729	3627651	3951773	4256672	4918471	4905154	5347581	6965078	6894386	6848770	6622691	7220908
Imports of goods (in EUR)	2836352	2922542	2980536	3275259	3676185	3995077	4322374	4996528	5012916	5473587	7178605	7121075	7009480	6794693	7437393
Exports index (1990=100)	100	103	106	117	132	144	155	179	179	195	254	251	250	241	263
Exports as % of GDP	16.1	15.4	15.5	15.3	16.2	17.6	18.0	18.7	18.5	18.6	20.4	19.7	19.9	20.5	22.0
EU-15															
Exports of goods (in EUR)	n.a.	1201850	1224991	1247462	1396704	1572823	1665205	1856468	1944269	2033628	2411635	2473163	2481826	2453286	2639310
Imports of goods (in EUR)	n.a.	1232648	1235180	1183345	1319305	1476558	1547433	1720310	1835065	1969006	2394873	2398083	2358467	2351142	2564615
Exports index (1991=100)	n.a.	100	102	104	116	131	139	154	162	169	201	206	207	204	220
Exports as % of GDP	n.a.	20.5	20.0	20.3	21.7	23.4	23.6	25.0	25.1	24.9	27.7	27.4	26.5	25.8	26.6
Exports as % of World imports	n.a.	41.1	41.1	38.1	38.0	39.4	38.5	37.2	38.8	37.2	33.6	34.7	35.4	36.1	35.5
CEEC-8															
Exports of goods (in EUR)	31357.9	32296.8	34753.6	44575.1	52126.4	61702.7	66691.1	81695.5	94109.4	98758.6	129082.4	148052.8	159724.4	173113.3	209204.6
Imports of goods (in EUR)	28150.7	33433.8	38384.9	53203.6	61423.5	74031.2	89023.1	108973.8	122628.0	127080.8	162833.3	179233.4	189009.4	200259.2	235200.5
Exports index (1990=100)	100.0	103.0	110.8	142.1	166.2	196.8	212.7	260.5	300.1	314.9	411.6	472.1	509.4	552.1	667.2
Exports as % of GDP	n.a.	n.a.	n.a.	n.a.	n.a.	29.3	27.9	30.3	32.4	32.5	36.7	37.4	37.8	41.5	46.0
Exports as % of World imports	1.11	1.11	1.17	1.36	1.42	1.54	1.54	1.64	1.88	1.80	1.80	2.08	2.28	2.55	2.81
Exports to EU-15 as % of EU-15 total imports	n.a.	1.54	1.75	2.14	2.34	2.53	2.53	2.87	3.34	3.47	3.69	4.19	4.57	4.94	5.38
Exports to EU-15 as % of total exports	46.0	58.9	62.2	56.8	59.2	60.6	58.8	60.4	65.1	69.1	68.4	67.8	67.5	67.1	65.9
CEEC-3															
Exports of goods (in EUR)	17887	8766	9771	10588	12117	13854	13955	15503	15264	15747	21344	23647	25925	27750	33372
Imports of goods (in EUR)	20990	9793	11649	13267	13891	18134	19393	22414	22471	22397	29909	35744	38617	43358	51242
Exports index (1990=100)	100	49	55	59	68	77	78	87	85	88	119	132	145	155	187
Exports as % of GDP	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	22.8	23.8	21.3	25.9	26.4	26.9	25.7
Exports as % of World imports	0.63	0.30	0.33	0.32	0.33	0.35	0.32	0.31	0.30	0.29	0.30	0.33	0.37	0.41	0.45
Exports to EU-15 as % of EU-15 total imports	n.a.	0.28	0.32	0.38	0.45	0.47	0.45	0.46	0.47	0.46	0.52	0.61	0.68	0.74	0.78
Exports to EU-15 as % of total exports	21.7	38.9	40.5	42.9	48.6	50.1	50.2	51.1	56.2	57.9	58.4	61.5	61.5	62.3	60.0

Sources: UNCTAD. World Bank and WIIW (The Vienna Institute for International Economic Studies) data bases.